USGS Topographic Quad / DRG Index

Contributed by AGRC Administrator
17, Oct. 2007
Last Updated 17, Oct. 2007

These ArcMap VBA Scripts create HTML tables of all the USGS Quads, their centroid coordinates, an associated county, and links to download them. One script sorts the resulting table by SGID Quad Number, the other by USGS Quad Name. The scripts assume that there are two layers in an ArcMap Project. The first layer (0) is the SGID.U024.CountyBoundaries and the second layer (1) is SGID.U024.USGS24KQuads.

These tables are used on the gis.utah.gov portal for the following content:
 - By Quad Name: Download USGS Scanned Topographic Maps (1:24000)
 - By Quad Number: Download USGS Scanned Topographic Maps (1:24000)

VBA Code:

```
Public Sub QuadNumTable()
    Open "C:/temp/quadnumout.html" For Output As #1

    Dim pMxDoc As IMxDocument
    Dim pMap As IMap
    Set pMxDoc = ThisDocument
    Set pMap = pMxDoc.FocusMap

    Dim pCoFlayer As IFeatureLayer
    Dim pQFLayer As IFeatureLayer
    Dim pQFC As IFeatureClass
    Dim pCoFC As IFeatureClass
    Set pCoFlayer = pMap.Layer(0)
    Set pQFLayer = pMap.Layer(1)
    Set pQFC = pQFLayer.FeatureClass
    Set pCoFC = pCoFlayer.FeatureClass

    Dim pTableSort As ITableSort
    Set pTableSort = New TableSort


    Set pTableSort.Table = pQFC
    pTableSort.Fields = "LOCATION"
    pTableSort.Ascending("LOCATION") = True
    pTableSort.Sort Nothing

    Dim pQFCursor As IFeatureCursor
    Dim pQFeature As IFeature
    Set pQFCursor = pTableSort.Rows
    Set pQFeature = pQFCursor.NextFeature

    Dim QName As String
    Dim QNum As String
    Dim QOhio As String
    Dim CoString As String
    Dim pQPoly As IArea
    Dim pQPoint As IPoint
    Dim centerXY As String
    Dim centerCounty As String

    Print #1, "<table>"
    Print #1, "  <tr>"
    Print #1, "  <td>Quad Number</td>"
    Print #1, "  <td>Quad Name</td>"
    Print #1, "  <td>Ohio Code  </td>"
    Print #1, "  <td>Center, UTM NAD83  </td>"
```

```
    Print #1, "  <td>Center*, County</td>"
    Print #1, "  </tr>"

    Do Until pQFeature Is Nothing

        QNum = pQFeature.Value(pQFC.FindField("LOCATION"))
        QName = pQFeature.Value(pQFC.FindField("NAME"))
        QOhio = pQFeature.Value(pQFC.FindField("OHIO_CODE"))

        Set pQPoly = pQFeature.Shape
        Set pQPoint = pQPoly.Centroid
        centerXY = CLng(pQPoint.Y) & "N " & CLng(pQPoint.X) & "E"

        Dim pSpatialFilter As ISpatialFilter
        Set pSpatialFilter = New SpatialFilter
        Set pSpatialFilter.Geometry = pQPoint
        pSpatialFilter.SpatialRel = esriSpatialRelWithin

        Dim pCoCursor As ICursor
        Dim pCoRow As IRow
        Set pCoCursor = pCoFlayer.FeatureClass.Search(pSpatialFilter, False)
        Set pCoRow = pCoCursor.NextRow

        If pCoRow Is Nothing Then
            Set pSpatialFilter.Geometry = pQPoly
            pSpatialFilter.SpatialRel = esriSpatialRelIntersects
            Set pCoCursor = pCoFC.Search(pSpatialFilter, False)
            Set pCoRow = pCoCursor.NextRow
        End If

        Print #1, "  <tr>"
        Print #1, "  <td><a href=""ftp://ftp.agrc.state.ut.us/DRG_83/" & LCase(QNum) & "_drg24.zip"">" & QNum & "</a></td>"
        Print #1, "  <td>" & QName & "</td>"
        Print #1, "  <td>" & QOhio & "</td>"
        Print #1, "  <td>" & centerXY & "</td>"
        If Not pCoRow Is Nothing Then
            Print #1, "  <td>" & pCoRow.Value(pCoFC.FindField("NAME")) & "</td>"
        Else
            Print #1, "  <td>n/a</td>"
        End If
        Print #1, "  </tr>"

        Set pQFeature = pQFCursor.NextFeature

    Loop
    Print #1, "</table>"
    Print #1, "<p>* Shows the Utah county that is at the quads centeroid, or if centroid is not available, a county that
interesects the quad.</p>"
    Close #1


End Sub

Public Sub QuadNameTable()
    Open "C:/temp/quadnameout.html" For Output As #1

    Dim pMxDoc As IMxDocument
    Dim pMap As IMap
    Set pMxDoc = ThisDocument
    Set pMap = pMxDoc.FocusMap

    Dim pCoFlayer As IFeatureLayer
    Dim pQFLayer As IFeatureLayer
    Dim pQFC As IFeatureClass
    Dim pCoFC As IFeatureClass
```

```
    Set pCoFlayer = pMap.Layer(0)
    Set pQFLayer = pMap.Layer(1)
    Set pQFC = pQFLayer.FeatureClass
    Set pCoFC = pCoFlayer.FeatureClass

    Dim pTableSort As ITableSort
    Set pTableSort = New TableSort


    Set pTableSort.Table = pQFC
    pTableSort.Fields = "NAME"
    pTableSort.Ascending("NAME") = True
    pTableSort.Sort Nothing

    Dim pQFCursor As IFeatureCursor
    Dim pQFeature As IFeature
    Set pQFCursor = pTableSort.Rows
    Set pQFeature = pQFCursor.NextFeature

    Dim QName As String
    Dim QNum As String
    Dim QOhio As String
    Dim CoString As String
    Dim pQPoly As IArea
    Dim pQPoint As IPoint
    Dim centerXY As String
    Dim centerCounty As String

    Print #1, "<table>"
    Print #1, "  <tr>"
    Print #1, "  <td>Quad Number</td>"
    Print #1, "  <td>Quad Name</td>"
    Print #1, "  <td>Ohio Code  </td>"
    Print #1, "  <td>Center, UTM NAD83  </td>"
    Print #1, "  <td>Center*, County</td>"
    Print #1, "  </tr>"

    Do Until pQFeature Is Nothing

        QNum = pQFeature.Value(pQFC.FindField("LOCATION"))
        QName = pQFeature.Value(pQFC.FindField("NAME"))
        QOhio = pQFeature.Value(pQFC.FindField("OHIO_CODE"))

        Set pQPoly = pQFeature.Shape
        Set pQPoint = pQPoly.Centroid
        centerXY = CLng(pQPoint.Y) & "N, " & CLng(pQPoint.X) & "E"

        Dim pSpatialFilter As ISpatialFilter
        Set pSpatialFilter = New SpatialFilter
        Set pSpatialFilter.Geometry = pQPoint
        pSpatialFilter.SpatialRel = esriSpatialRelWithin

        Dim pCoCursor As ICursor
        Dim pCoRow As IRow
        Set pCoCursor = pCoFlayer.FeatureClass.Search(pSpatialFilter, False)
        Set pCoRow = pCoCursor.NextRow

        If pCoRow Is Nothing Then
            Set pSpatialFilter.Geometry = pQPoly
            pSpatialFilter.SpatialRel = esriSpatialRelIntersects
            Set pCoCursor = pCoFC.Search(pSpatialFilter, False)
            Set pCoRow = pCoCursor.NextRow
        End If

        Print #1, "  <tr>"
```

```
    Print #1, "  <td><a href=""ftp://ftp.agrc.state.ut.us/DRG_83/" & LCase(QNum) & "_drg24.zip"">" & QNum & "</a></td>"
    Print #1, "  <td>" & QName & "</td>"
    Print #1, "  <td>" & QOhio & "</td>"
    Print #1, "  <td>" & centerXY & "</td>"
    If Not pCoRow Is Nothing Then
       Print #1, "  <td>" & pCoRow.Value(pCoFC.FindField("NAME")) & "</td>"
    Else
       Print #1, "  <td>n/a</td>"
    End If
    Print #1, "  </tr>"

    Set pQFeature = pQFCursor.NextFeature

  Loop
  Print #1, "</table>"
  Print #1, "<p>* Shows the Utah county that is at the quads centeroid, or if centroid is not available, a county that
interesects the quad.</p>"
  Close #1


End Sub
```